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ABSTRACT

The hypothesis guiding this study was that staff members from schools participating in an organizational development (OD) program would increase the functioning levels of four groups of organizational variables. The OD treatment contained three distinct phases: diagnosis, skill development and planning, and implementation. A modified Survey of Organizations (SQO) instrument was used to measure the dependent variables. The SOO was administered three times to the treatment and control groups. Limited support was found for the hypothesis. The results imply that future OD projects should be carefully scrutinized for their potential cost-effectiveness. (Author)

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THE EFFECTS OF AN ORGANIZATION DEVELOPMENT PROGRAM ON SATISFACTION, GROUP PROCESS, CLIMATE, LEADERSHIP, AND STUDENT ACHIEVEMENT[1]

Robert Kahn (1974) listed three problem areas that must be resolved before organizational development (OD) can mature into a usable set of principles and procedures for organizational change. First, the literature consists of redundant personal opinions which lack quantitative data and validation. Second, the term itself remains scientifically undefined and is a convenient label for a host of activities. Finally, research, to date, fails to focus directly on organizational phenomena.

In the fall of 1973 and without a knowledge of Kahn's criticisms, a staff development program, minimizing these issues, was designed for teachers and administrators. The objective was to build an OD project to change specific organizational components in four urban intercity schools. This paper describes the program and presents the research findings regarding its results.

Theoretical Overview

The definition of OD used in designing the intervention program consisted of a synthesis of those made by Hornstein, Bunker, Burke, Gindes, and Lewicki (1971) and Schmuck and Miles (1971). OD is a process focusing on cultural change within an organization by applying behavioral science knowledge during a period of planned sustained effort. Moreover, this applied knowledge constitutes a technology with specific skills in areas such as communication, survey feedback, goal setting, and problem solving.

Recent writers such as Hornstein, et. al. (1971), Kahn (1974), and Kimberly and Nielsen (1975) lament the lack of cases where OD has been systematically

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studied. The following studies, however, represent several successful OD programs that have been reported in the literature: Guest (1962), Zand, Steele, and Zalkind (1969), Beckhard and Lake (1971), Seashore and Bowers (1970), Bowers (1973), and Kimberly and Nielsen (1975). Empirical studies of OD in schools is even more sparce. What appears to be a most significant study was completed by Schmuck, Runkel, and Langmeyer (1969). This project included a comprehensive OD intervention with a single school faculty. The findings indicated that communication, norms, and problem solving were improved significantly. The theoretical foundations of the developing technology and the limited empirical support are suggestive of an excellent potential for helping schools become more effective. Moreover, where positive change is achieved, it appears to be durable and lasting (Seashore and Bowers, 1969).

Change Program

Recognizing the fact that OD interventions should not be made in a random fashion, Chesler's (1971) matrix for improving interracial classrooms and Bowers (1973) findings regarding interventions were used to design the program. For example, the finding of Bowers that survey feedback was a powerful change intervention in the ICL study increased its use in this program. The matching of curriculum development or teaching practices, as suggested by Chesler, with peer sharing sessions and problem solving further illustrates this point. A brief summary of the OD program used in the four intercity schools follows.

Entry

Two junior high schools and two elementary schools were selected to participate in the proposed training experiment. In the spring of 1974, two staff members visited each school during a staff meeting. A very generalized definition of OD was presented. In addition, they were told that a two-week preservice workshop would be held in August in which the total staff would be asked to

participate. A total of 76 of 106 (71.1%) voluntarily agreed to attend the workshop.

Diagnosis

Immediately following this faculty commitment, data were collected from teachers and students regarding their attitudes toward each other and toward the school. Data describing the racial and socioeconomic levels of the schools, student achievement levels, suspension and discipline rates, and teacher characteristics were compiled from school records. In addition, communication behavior and planning processes were diagnosed.

Preservice OD Workshop

The two week workshop was divided into daily components of OD during the morning and curriculum development in reading and mathematics during the afternoon. Four phases of the OD programs were apparent.

1. Data feedback. The staff members were given a descriptive profile of their faculty -- average age, sexual configuration, average years teaching experience, and educational attainments. The data describing their student body were then presented -- racial composition, achievement levels (low), and disciplinary rates (high). Finally, data regarding the organizational processes of communication and planning were presented. The communication behavior generally was controlling (personally deciding an issue and then attempting to get others to agree). The planning behavior was traditional (emphasizing stability and control rather than on innovation).

2. Problem definition and goal setting. A modifed Delphi procedure was used to define and to prioritize the schools' problems. After confronting the data, an open-ended Delphi questionnaire was given to the participants. They were requested to list specific problems which should become the focus of the workshop. The ten most frequently listed problems were listed on a second

questionnaire. Three iterations with this form were made to develop a consensus of opinion and a clearly delineated minority statement.

3. Skill development. In conjunction with the modified Delphi procedure, simulation exercises were used to develop communication, conflict management, team building, and problem solving skills.

4. Problem solving. During the second week, the participants were given the task of designing a program and staff structure for alleviating the top three problems that had been identified with the Delphi procedure. A force field analysis technique was used to guide this planning effort. The outcome was to a series of specific plans and new organizational structures (committees) to coordinate the change efforts during the school year.

Preservice Curriculum Workshop

The afternoon sessions of the two-week preservice workshop, which were carried on concurrent to the morning OD sessions, were designed specifically for teaching staff from schools eligible for a Federal assistance program. These afternoon sessions provided in-service training on reading and mathematics to be implemented during the subsequent school year.

Reassembly Sessions

To provide continuity and reinforcement to the OD project, four day-long reassembly sessions were used through the school year. At these meetings the staff members were to evaluate their progress in the problem solving sequence, renew their commitment, and refocus the OD program.

Rationale and Hypotheses

The change program focused on cultural and OD skill training during the morning sessions and on technological or curricular change and pedagogical skill development in the afternoon sessions. Therefore, the treatment procedures, as the independent variable, comprised a multi-stage intervention based on recent

theory, research, and practice (Chesler, 1971; Bowers, 1973; Schmuck and Miles, 1971; and Schmuck and Runkel, 1972). Consequently, it was reasoned that organizational processes and student achievement levels, as dependent variables, should be improved. Based on this reasoning, the following hypotheses were deduced to guide the study.

Hypothesis One

Teachers participating in the OD program will exhibit greater increases on the organizational variables of satisfaction, climate, group process, peer leadership, and administrator leadership than a similar control group of teachers.

Hypothesis Two

Student achievement in the schools participating in the OD program will increase more than in the control schools.

Research Methodology

Sampling

Teachers comprising the sample were from three elementary and three junior high schools located within the intercity. These six schools contained the largest number of students in the district scoring below the 20th percentile on reading and mathematics. Two elementary and two junior high school staffs were selected by the district administration for the previously discussed OD staff development program. The two remaining school staffs served as the control group.

The OD treatment group had 106 faculty members from four schools. Only 76 participated in the workshop. The returns from the two data collection sessions, held during workshop or faculty meetings, were 75 (71% of the total and 98.7% of workshop participants) and 97 (92%). The control group from the two schools had 62 faculty members. The return rates for this group were 55 (89%) and 52 (84%). Overall, the research participation rate was 83.0% (279 of 336).

For the reading and mathematics portion, a total of 20 school buildings in

the intercity area were eligible for involvement, including 13 public elementary schools, 1 parochial elementary school, and 6 public junior high schools. All treatment and control schools in the study were eligible for involvement in the afternoon in-service reading and math development effort. Approximately 75 percent of those teachers in the 20 eligible schools actually participated in the afternoon sessions over the two-week period. In effect, some but not all teachers from the treatment schools and some but not all teachers from the control schools participated in the afternoon workshop experiences related to reading and math program development.

Finally, a list was compiled of student achievement scores for sixth and ninth grade students who also had taken the test as fifth and eighth graders respectively. A random sample of 112 (approximately 18 per school) was then selected.

Measurement

School processes. These data were collected with a modified Survey of Organizations (SOO) questionnaire (Taylor and Bowers, 1972). This instrument was developed primarily for use in studies of process and development programs in industrial and commercial organizations. The SOO's strong theoretical underpinning, however, supports the contention that the item content should be applicable to other organizational types. More specifically, the SOO was developed for general application and was based on a meta-theory of organizational functioning (Taylor and Bowers, 1972). Consequently, its content is of known and integrated relevance for usefulness in organization development processes.

The SOO has 55 items forming 16 subscales in five areas of organizational functioning. Table 1 contains a descriptive content summary for each subscale. An additional measure was formed for a total of 17 by summing the responses to the 17 climate items. This subscale was named Overall Climate.

The measure is a paper-and-pencil instrument which includes items generally descriptive of existing conditions and practices focusing mainly on aspects of the work setting. Responses to most items are recorded on a five-point extent scale. The response alternatives range from "to a very little extent" to "to a very great extent." A few questions have different but similar five-option response sets. The categories were assigned values from one to five.

Since the original measure was developed for use in industrial and commercial enterprises, the words specific to such situations were changed to reflect the school situation. For example, plant was changed to building, foreman to principal, and manager to administrator. To test the instrument's stability after these modifications, alpha coefficients were calculated to estimate the subscale reliabilities. With a single exception, the alpha coefficients are comparable to the original form (See Table 1). The original form has reliability estimates ranging from .58 to .94 while the range for the modified SOO, excluding subscale 2 -- Motivational Conditions, is .52 to .89. In summary, the theoretical foundations and the reliability estimates support the position that the modified SOO also is useful for studying organizational functioning in schools.

Student achievement. This variable was measured with the Iowa Test of Basic Skills (ITBS). The school district administers this test late in the spring semester of each school year. The 1973-74 and the 1974-75 school year results were used for the same students as they progressed the fifth to the sixth and eighth to the ninth grades. As suggested by the ITBS manual, percentile scores were used (Lindquist and Hieronymus, 1964).

Staffing data. The district personnel summaries were used to measure the levels of turnover, absenteeism, and requests for transfers. Since these data are collected by the personnel department for the management information system, highly accurate data were provided. A limitation is that only aggregate data

for the total building staff is compiled. Therefore, the unit of analysis for these data must be the building.

Data Collection Procedures

Survey of Organizations. Questionnaire data were collected two times using the SOO. Each testing session occurred during a regularly scheduled faculty meeting. The pretest for the experimental group was made during the initial workshop session (August, 1974) and for the control group during the second week of the school year. The post-test was completed by both groups during the last week of April, 1975.

Other data. Information regarding student achievement levels and teacher requests for transfer, turnover, and absenteeism were taken from district records. The director of research compiled these data for the investigators.

Data Analysis

To test hypothesis one, a two-by-two factorial analysis of covariance procedure was used. Factorial designs permit the evaluation of the combined simultaneous effects of two or more independent variables on a dependent variable. In this instance, the technique provides for the interpretation of both the main and interactive effects of the group (G) and test (T) or time variables on the 17 subscales of the SOO questionnaire. Because of the possible extraneous effects that could not be controlled by random sampling, it was impossible to control for sex, age, experience, or educational attainment. Since these factors could affect the dependent variables, the covariance procedure provided a statistical control for their effects. In addition, such an adjustment of the SOO mean scores, frees the results of lower order interaction effects due to sex, age, experience, and educational attainment.

To test hypothesis two, analysis of covariance also was used. In this instance, however, the covariate was the matched pretest score for the reading and

mathematics scales. The rationale for this procedure is that present achievement levels are good predictors of future achievement levels. To lessen this effect, the group achievement levels were equated or adjusted by using the pretest as covariate. The posttest levels were then compared for experimental effects.

Findings

Hypothesis One

This hypothesis posited that the descriptions of the organizational processes would improve more for the teachers participating in an OD workshop than a similar control group. The results for testing this assertion comprise Table 2. Adjusted mean scores on each subscale are given for both groups (G) on the two administrations of the tests (T). Therefore, a total of four adjusted mean scores are presented for each subscale analysis. The right side of the table contains the analysis of covariance summaries for the 17 subscales.

Full support for the hypothesis exists when a significant interaction effect (TG) results; that is, the adjusted mean scores for the trainee group increase while the scores for the control group decrease. Partial support is found when a main effect for test (T) is found and the trainee scores are increasing with each testing wave. A discussion of each measurement area and subscale follows.

Job satisfaction. Significant main effects were found for both test (T) variable ($F = 14.6$, $p = .00$) and group (G) variable ($F = 4.6$, $p = .03$). The effects were contrary to the hypothesized direction, however. The control group was higher than the trainee group and the satisfaction levels of both groups declined. The interaction effect was not significant. Therefore, the hypothesis not only lacked support, but was partially refuted in this measurement area.

Organizational climate. The seven variables, numbered two through eight in Table 2, constitute this measurement area. Significant main effects were found for the grouping variable (G) on five of the seven subscales: Human Resources

Primacy ($F = 4.9$, $p = .03$), Communication Flow ($F = 8.8$, $p = .00$), Decision-Making Practices ($F = 5.8$, $p = .02$), Lower Level Influence ($F = 4.2$, $p = .04$), and Overall Climate ($F = 7.3$, $p = .01$). In all instances, the control group had higher mean scores than the treatment or trainee group.

The single significant main effect for changes over time or test waves (T) was on Lower Level Influence ($F = 4.2$, $p = .04$). Examining the means for this subscale reveals that the means for both groups increased.

No significant interaction effects (TG) were found. Overall, the hypothesis of positive changes was not supported for the climate area of measurement.

Group process. No change or interaction effects (TG) were found at the .05 level for this variable. The interaction effects did approach significance ($F = 3.3$, $p = .07$). The OD treatment group increased slightly while control group mean declined. Therefore, this portion of the hypothesis had some tentative support.

Peer leadership. Significant main effects for the test variable were found on three of the four subscales. All of the mean values declined, however. Subscale 13, Interaction Facilitation, was found to have different mean scores for the two groups ($F = 3.9$, $p = .05$). The control group mean was higher than the OD treatment group. Consequently, no support was found that the intervention improved peer leadership.

Administrator leadership. Significant main effects were found for the grouping variable (G) on all four administrator subscales: Administrator Support ($F = 10.1$, $p = .00$), Goal Emphasis ($F = 15.8$, $p = .00$), Work Facilitation ($F = 17.9$, $p = .00$), and Interaction Facilitation ($F = 14.9$, $p = .00$). Again the means for the control group were higher on the four administrator leadership subscales than the experiemental group.

In addition, the main effects of test (T) were significant for Support

(F = 8.2, p = .00), Goal Emphasis (F = 4.1, p = .04), and Interaction Facilitation (F = 4.4, p = .04). The means declined. No significant interaction effects were found. The results in this area of the SOO are similar to other areas. The hypothesis was not supported.

In summary, little support was found for hypothesis one. The control group generally had higher mean scores than the treatment group and, where changes occurred, both groups declined.

Hypothesis Two

The hypothesis that reading and mathematics achievement scores would increase more in the treatment schools than in control schools also was rejected. The data for testing hypothesis two are summarized in Table 3. Contrary to the prediction, the scores for reading and mathematics declined for both groups. The adjusted mean scores and the F values (2.70, p = .10 and .30, p = .55) indicate that both groups declined at approximately the same rates, however. A possible explanation for these results is that the ITBS may not be a valid test for either group. If the validity is lacking, then the district should expect a continued decline in the scores.

Related Findings

Data describing the personnel trends are summarized in Table 4. Requests for transfer increased for both groups. The control group had higher rates of transfer request in both years (14.52% and 20.97%) than the treatment group (9.43% and 12.26%). Moreover, the change rate was much different (2.83% and 6.45%). The actual turnover rates started and remained almost identical for both groups. Each had a similar increase in turnover. Finally, the average number of work days missed (teacher absenteeism) declined for both groups. In 1974-75, the average work days missed for each school faculty was the same (197). These data should be interpreted with some caution. Although the information is accurate, it was

available only in aggregate form for each building staff as a whole. Therefore, explanations for individual variations (extended sick leaves, for example) are not possible. A reasonable conclusion appears to be that the personnel trends also are similar.

Summary and Conclusions

The hypotheses were not supported. The findings suggest that this OD effort had, at most, modest impacts upon the organizational functioning, achievement levels, and personnel patterns of the schools in an urban setting. Possible post hoc explanations and limitations for this lack of effect include the following

Certainly several cautions are in order with reference to specific outcomes which might realistically be anticipated from this intervention. Note should be taken, for example, that 30 faculty members in the treatment schools did not attend the initial two-week morning workshop program relating to Organization Development. Yet in the subsequent data collection session, the responses of these same 30 individuals to the SOO were obtained and included in the posttest analyses. The possible influence of these 30 individuals in terms of the posttest results in treatment schools is an intriguing question. In addition, it should be noted that, although teachers in the control schools were not involved in gaining an orientation to OD, some of these individuals were involved in an improvement-related intervention by their participation during the afternoon sessions of the beginning-of-the-school-year, two-week program on reading and math. Thus teachers from the control schools might, in fact, have been exposed during these afternoon sessions to experiences that would have an impact on their perceptions of organization climate and related phenomena about their particular school situation.

A second limitation involves the OD consultants. The eight consultants apparently were not in agreement on all phases of intervention. A perceptual evaluation

by the investigators led to the following conclusion. Even with six days to build themselves into an OD team, the consultants practiced their own strengths (sensitivity training and confrontation, for example) rather than implementing the preplanned OD workshop design. The result may well have been a fragmented, less intensive experience for the four school faculties than was suggested by the earlier description of the change program.

Some caution also should be exercised in interpreting the results of this study because of the small amount of intervention contact that took place after the beginning of the year. The four-day-long, reassembly sessions, conducted during the remainder of the school year, may not have provided adequate time for any meaningful renewal of commitment, further development of skills, or activities relating to the OD emphasis.

An additional factor is that the participants' knowledge of OD processes and technology was not assessed. Possibly, the participants from the treatment schools did not gain adequate conceptual understanding from their intervention experiences, and failed to view the effort as an attempt to have long-range payoff in terms of organizational improvement.

Another limitation relates to the extent that this kind of intervention (a brief workshop format with subsequent survey feedback) can be expected to have an impact upon student achievement. A lack of differences between students in the control versus the treatment schools may serve more an an indictment of the afternoon sessions focusing on reading and math than an indictment of the morning sessions focusing on OD. An alternative indictment involves the validity of the achievement tests.

Finally, a discussion is needed of the findings that the control school had higher mean scores on the measures of job satisfaction, human resources primacy, communication flow, decision making practices, lower level influence, and overall

climate than the treatment school scores. A reasonable explanation is that what occurred during this intervention was the creation of greater awareness on the part of faculty members from treatment schools with reference to organizational improvement issues and procedures. In effect, the two-week OD workshop simply provided exposure to the potential of OD without providing a meaningful follow-up process for actual developmental activities during the school year.

Generally speaking, then, support was not found for the popular and optimistic claims about the extensive effects of OD programs. The limited improvement found in this relatively well-financed and conceptualized project implies that future OD programs need to be scrutinized and evaluated for their potential cost-effectiveness. More specifically, high emphasis should be placed upon the team building within the OD intervention staff, learning the OD theory and technology, and continuing reinforcement with follow-up workshops.

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TABLE 1

Summary of Content Descriptions and Reliability Estimates for 17 Subscales of the Survey of Organizations Questionnaire Using Industrial and Educational Samples

AREA Subscale	Items Per Subscale	Description[a]	Internal Consistency Reliability Estimates: Industrial Setting	Internal Consistency Reliability Estimates: Educational Setting
JOB SATISFACTION				
1. Job Satisfaction	7	Level of Employee Satisfaction with pay and advancement, job itself, organization, supervisor, and peer group.	.87	.71
ORGANIZATIONAL CLIMATE				
2. Motivational Conditions	3	The methods employed to resolve conflict and whether conditions encourage effective work.	.80	.15
3. Human Resources Primacy	3	The extent to which people are considered to be one of the organization's most important assets.	.80	.70
4. Communication Flow	3	The level of receptivity to new ideas and the adequacy of information content and distribution.	.78	.64
5. Decision-making Practices	4	The extent to which decisions are made at the levels where the most adequate information is available and to which affected persons are asked for their ideas.	.79	.80
6. Technological Readiness	2	Whether current methods, material, and resources are introduced and maintained.	.58	.52

Table 1 Continued

AREA Subscale	Items Per Subscale	Description	Internal Consistency Reliability Estimates: Industrial Setting	Internal Consistency Reliability Estimates: Educational Setting
7. Lower Level Influence	2	Whether lowest-level supervisors and employees feel they have influence on events in their area.	.70	.53
8. Overall Climate	17	Sum of six Organizational Climate measures		.87
GROUP PROCESS				
9. Group Process	7	Characteristics work group functioning: confidence and trust among members, effective group decision-making and communication, mutual help and coordinated effort, and flexibility, adaptability, and creativity.	.91	.83
PEER LEADERSHIP				
10. Support	3	Behavior by subordinates that enhances each other's feelings of personal worth.	.87	.84
11. Goal Emphasis	2	Behavior by surordinates that stimulates by enthusiasm for achieving excellent performance.	.70	.76
12. Work Facilitation	3	Behavior that is mutually helpful.	.89	.80
13. Interaction Facilitation	3	Behavior by subordinates toward each other that encourages the development of close cooperative working relationships.	.90	.85

Table 1 Continued

AREA Subscale	Items Per Subscale	Description	Internal Consistency Reliability Estimates: Industrial Setting	Internal Consistency Reliability Estimates: Educational Setting
ADMINISTRATOR LEADERSHIP				
14. Support	3	Behavior that enhances the staff member's feeling of personal worth and importance.	.94	.89
15. Goal Emphasis	3	Behavior that stimulates an enthusiasm for meeting the school's goals and achieving excellent performance.	.85	.89
16. Work Facilitation	4	Behavior that removes obstacles, planning, coordinating, and providing resources.	.88	.85
17. Interaction Facilitation	3	Behavior that encourages staff members to develop close, cooperative working relationships.	.89	.87

[a]Adapted from Bowers, D. G. OD techniques and their results in 23 organizations: The Michigan ICL study. Journal of Applied Behavioral Science, 1973, 9(1), 21-43.

TABLE 2

Means, Standard Deviations, and Analysis of Covariance Summaries for Pre and Post Tests by Groups in the SOO Questionnaire Subscales

Survey of Organizations AREA / Subscale	Test (T)	Groups (G): Trainee Mean	Trainee SD	Control Mean	Control SD	Analysis of Covariance Summaries: Source	df	Mean Square	F	P
JOB SATISFACTION										
1. Job Satisfaction	Pre	26.2	4.3	27.7	8.1	T	1	441.6	14.6	.00*
	Post	24.2	4.8	24.5	6.3	G	1	140.8	4.6	.03*
	Pre-Adj. A	25.8		28.2		TG	1	58.8	1.9	.16
	Post-Adj.	24.1		24.7		Error	270	30.3		
ORGANIZATIONAL CLIMATE										
2. Motivational Conditions	Pre	10.1	1.9	10.6	1.8	T	1	3.0	.9	.34
	Post	10.2	1.5	10.0	2.2	G	1	5.8	1.8	.18
	Pre-Adj.	10.0		10.7		TG	1	9.9	3.0	.08
	Post-Adj.	10.1		10.1		Error	270	3.3		
3. Human Resources Primacy	Pre	8.5	2.3	8.9	2.0	T	1	1.2	.3	.60
	Post	8.6	2.0	9.1	2.3	G	1	21.3	4.9	.03*
	Pre-Adj.	8.4		9.0		TG	1	.0	.0	.99
	Post-Adj.	8.6		9.2		Error	270	4.3		
4. Communications Flow	Pre	8.5	2.1	9.6	2.4	T	1	12.0	2.3	.13
	Post	8.5	2.1	8.8	2.9	G	1	44.8	8.8	.00*
	Pre-Adj.	8.5		9.7		TG	1	12.5	2.5	.12
	Post-Adj.	8.5		8.9		Error	270	5.1		
5. Decision Making Practices	Pre	11.7	2.4	12.6	2.7	T	1	2.1	.3	.59
	Post	11.7	3.1	12.1	2.7	G	1	41.1	5.8	.02*
	Pre-Adj.	11.6		12.7		TG	1	6.3	.9	.35
	Post-Adj.	11.7		12.2		Error	270	7.1		

Table 2 Continued

Survey of Organizations AREA Subscale	Test (T)	Groups (G) Trainee Mean	Trainee SD	Control Mean	Control SD	Analysis of Covariance Summaries Source	df	Mean Square	F	P
6.	Pre	6.3	1.7	6.5	1.8	T	1	2.0	.8	.38
Technological	Post	6.3	1.6	6.2	1.6	G	1	1.9	.7	.40
Readiness	Pre-Adj.	6.2		6.6		TG	1	2.5	1.0	.33
	Post-Adj.	6.2		6.2		Error	270	2.6		
7.	Pre	5.2	1.4	5.2	1.4	T	1	8.4	4.2	.04*
Lower Level	Post	5.3	1.6	5.8	1.2	G	1	8.4	4.2	.04*
Influence	Pre-Adj.	5.1		5.3		TG	1	2.8	1.4	.24
	Post-Adj.	5.3		5.8		Error	270	2.0		
8.	Pre	50.4	9.1	53.4	9.0	T	1	18.1	.2	.64
Overall (Total)	Post	50.5	9.3	52.0	10.1	G	1	583.6	7.3	.01*
Climate	Pre-Adj.	49.8		54.0		TG	1	79.8	1.0	.32
	Post-Adj.	50.4		52.4		Error	270	80.0		
GROUP PROCESS										
9.	Pre	23.3	4.4	24.7	4.2	T	1	48.7	2.8	.10
Group	Post	23.2	3.8	23.1	4.9	G	1	41.5	2.4	.13
Process	Pre-Adj.	23.1		24.9		TG	1	58.0	3.3	.07
	Post-Adj.	23.2		23.1		Error	270	17.6		
PEER LEADERSHIP										
10.	Pre	10.9	2.1	11.4	2.1	T	1	24.8	5.5	.02*
Peer	Post	10.4	2.0	10.6	2.3	G	1	10.0	2.2	.14
Support	Pre-Adj.	10.8		11.4		TG	1	2.7	.6	.44
	Post-Adj.	10.4		10.6		Error	270	4.5		
11.	Pre	7.0	1.3	7.0	1.5	T	1	6.7	3.1	.08
Peer Goal	Post	6.5	1.5	6.9	1.7	G	1	4.2	1.9	.16
Emphasis	Pre-Adj.	7.0		7.1		TG	1	1.0	.5	.48
	Post-Adj.	6.5		6.9		Error	270	2.1		

Table 2 Continued

Survey of Organizations AREA Subscale	Test (T)	Groups (G) Trainee Mean	Trainee SD	Control Mean	Control SD	Analysis of Covariance Summaries Source	df	Mean Square	F	P
12.	Pre	9.7	2.3	10.1	2.2	T	1	24.1	4.7	.03*
Peer Work	Post	9.1	2.2	9.5	2.5	G	1	12.6	2.5	.12
Facilitation	Pre-Adj.	9.7		10.2		TG	1	.5	.1	.76
	Post-Adj.	9.1		9.5		Error	270	5.1		
13.	Pre	9.8	2.2	10.2	2.4	T	1	24.6	4.4	.04*
Peer	Post	9.2	2.4	9.6	2.5	G	1	22.0	3.9	.05*
Interaction	Pre-Adj.	9.7		10.4		TG	1	1.0	.2	.67
Facilitation	Post-Adj.	9.2		9.6		Error	270	5.6		
ADMINISTRATOR LEADERSHIP										
14.	Pre	12.1	2.4	13.1	2.0	T	1	48.3	8.2	.00*
Administrator	Post	11.3	2.7	12.0	2.5	G	1	59.8	10.1	.00*
Support	Pre-Adj.	12.0		13.1		TG	1	1.3	.2	.63
	Post-Adj.	11.3		12.1		Error	270	5.9		
15.	Pre	11.9	2.5	12.9	2.0	T	1	22.7	4.1	.04*
Administrator	Post	11.3	2.5	12.4	2.4	G	1	88.0	15.8	.00*
Goal Emphasis	Pre-Adj.	11.9		13.0		TG	1	.0	.0	.94
	Post-Adj.	11.2		12.5		Error	270	5.6		
16.	Pre	13.1	3.4	14.6	3.2	T	1	25.5	2.2	.14
Administrator	Post	12.4	3.8	13.9	3.2	G	1	206.5	17.9	.00*
Work	Pre-Adj.	12.9		14.8		TG	1	.0	.0	.97
Facilitation	Post-Adj.	12.3		14.1		Error	270	11.5		
17.	Pre	11.4	2.6	12.4	2.3	T	1	27.1	4.4	.04*
Administrator	Post	10.8	2.7	11.7	2.5	G	1	93.1	14.9	.00*
Interaction	Pre-Adj.	11.3		12.6		TG	1	1.1	.2	.68
Facilitation	Post-Adj.	10.7		11.8		Error	270	6.2		

*Significant beyond the .05 level

A = Adjusted Score

TABLE 3

Means, Standard Deviations, and Analysis of Covariance Summaries
for Student Achievement Levels in Reading and Mathematics
for the 1973-74 and 1974-75 School Years

	Reading Achievement Levels (Percentiles)				Analysis of Covariance Summaries				
	Treatment Group		Control Group						
Test	Mean	SD	Mean	SD	Source	df	Mean Square	F	P
Pre (1973-74)	42.5	28.5	53.3	32.8	Group	1	620.1	2.70	.10
Post (1974-75)	38.9	25.4	51.7	28.5	Error	109	229.4		
Adjusted Post	41.7		46.7						
	Mathematics Achievement Levels (Percentiles)								
Pre (1973-74)	41.3	23.3	48.9	36.2	Group	1	130.7	.35	.55
Post (1974-75)	36.9	24.3	44.8	34.7	Error	109	371.8		
Adjusted Post	38.9		41.2						

TABLE 4

Teacher Requests for Transfer, Turnover, and Absenteeism

Group	Requests for Transfer					
	1973-74		1974-75		Change	
	n	Percent	n	Percent	n	Percent
Treatment	10	9.43	13	12.26	+3	+2.83
Control	9	14.52	13	20.97	+4	+6.45

	Turnover					
	1973-74		1974-75		Change	
	n	Percent	n	Percent	n	Percent
Treatment	18	16.98	22	20.75	+4	+3.77
Control	11	17.74	13	20.97	+2	+3.23

	Average Work Days Missed Per School		Change
	1973-74	1974-75	
Treatment	245	197	-48
Control	443	197	-246